PMG1006-B20A

GPON SFU with 4-port GbE Switch

Version 1.00
Edition 1, 9/2013

User's Guide

Default Login Details	
LAN IP Address	http://192.168.1.1
User Name	admin
Password	1234

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IMPORTANT!

READ CAREFULLY BEFORE USE.

KEEP THIS GUIDE FOR FUTURE REFERENCE.

Screenshots and graphics in this book may differ slightly from your product due to differences in your product firmware or your computer operating system. Every effort has been made to ensure that the information in this manual is accurate.

Related Documentation

- Quick Start Guide

  The Quick Start Guide shows how to connect the GPON Device and get up and running right away.

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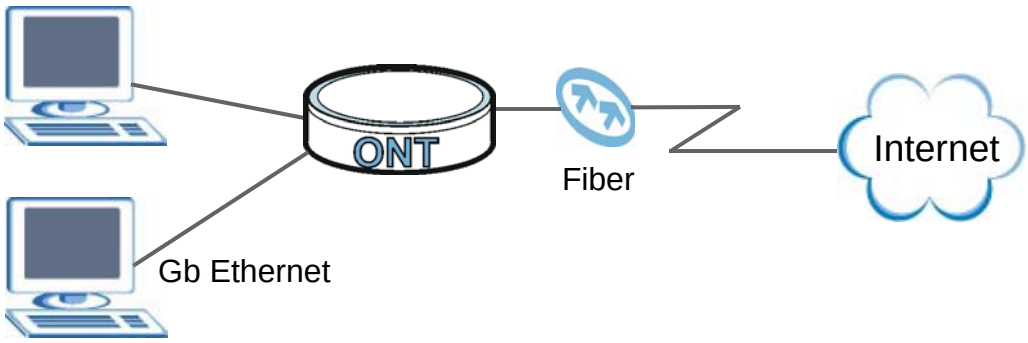
1

Introduction

1.1 Overview

The PMG1006-B20A SFU (Single Family Unit) combines a fiber optic GPON (Gigabit Passive Optical Network) ONT (Optical Network Terminal) with a built-in 4-port Gigabit Ethernet switch. Your GPON Device provides shared Internet access through a fiber optic line connected to the PON port's built-in optical transceiver.

Figure 1 GPON Device Providing Internet Access



1.2 Managing the GPON Device

Use the GPON Device's built-in Web Configurator to manage it. You can connect to it using a web browser such as Firefox or Internet Explorer. The Web Configurator gives you access to all the available settings for this product. For details on connecting to it, see the Section 2.1.1 on page 9.

1.3 Good Habits for Managing the GPON Device

Do the following things regularly to make the GPON Device more secure and to manage the GPON Device more effectively.

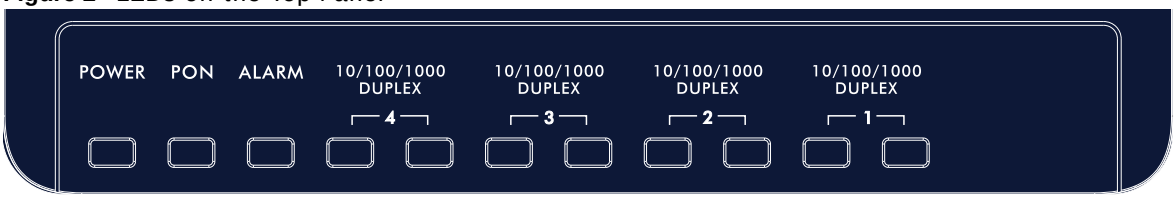
- Change the password. Use a password that's not easy to guess and that consists of different types of characters, such as numbers and letters.
- Write down the password and put it in a safe place.

- Back up the configuration (and make sure you know how to restore it). Restoring an earlier working configuration may be useful if the GPON Device becomes unstable or even crashes. If you forget your password, you will have to reset the GPON Device to its factory default settings. If you backed up an earlier configuration file, you would not have to totally re-configure the GPON Device. You could simply restore your last configuration.

1.4 LEDs (Lights)

The following graphic displays the labels of the LEDs.

Figure 2 LEDs on the Top Panel



None of the LEDs are on if the GPON Device is not receiving power.

Table 1 LED Descriptions

LED	COLOR	STATUS	DESCRIPTION
POWER	Green	On	The GPON Device is receiving power and is ready for use.
		Off	The GPON Device is not receiving power or has malfunctioned.
PON	Green	On	The GPON Device has a PON line connection.
	Orange	On	The GPON Device's PON port is physically connected but not registered.
	Red	On	The GPON Device's PON port is not connected. The optical transceiver may have malfunctioned or the fiber cable may not be connected or may be broken or damaged enough to break the PON connection.
ALARM	Red	On	An equipment failure has occurred.
		Off	The GPON Device has not detected an equipment failure.
10/100/100 1~4	Orange	On	The GPON Device has a 1 Gb Ethernet connection with another device (such as a computer) on the Local Area Network (LAN) through this port.
		Blinking	The GPON Device is sending/receiving data to/from the LAN through this port.
	Green	On	The GPON Device has a 100 Mb Ethernet connection with another device on the LAN through this port.
		Blinking	The GPON Device is sending/receiving data to/from the LAN through this port.
	Red	On	The GPON Device has a 10 Mb Ethernet connection with another device on the LAN through this port.
		Blinking	The GPON Device is sending/receiving data to/from the LAN through this port.
		Off	The GPON Device does not have an Ethernet connection with the LAN through this port.
DUPLEX 1~4	Green	On	The Ethernet port has a full duplex connection.
	Orange	On	The Ethernet port has a half duplex connection.

1.5 The Reset Button

If you forget your password or cannot access the Web Configurator, you will need to use the **RESET** button at the back of the GPON Device to reload the factory-default configuration file. This means that you will lose all custom configuration and the password will be reset to the default.

1.5.1 Using the Reset Button

1. Make sure the **POWER** LED is on (not blinking).
2. To set the GPON Device back to the factory default settings, press the **RESET** button for more than three seconds and then release it. The LEDs flash and the GPON Device restores the defaults and restarts.

Note: Press the **RESET** button for less than one second to restart the GPON Device without changing it back to the factory default settings.

2

The Web Configurator

2.1 Overview

The Web Configurator is an HTML-based management interface that allows easy GPON Device setup and management via Internet browser. Use Internet Explorer 8.0 and later or Firefox 23.0.0 and later versions. The recommended screen resolution is 1024 by 768 pixels.

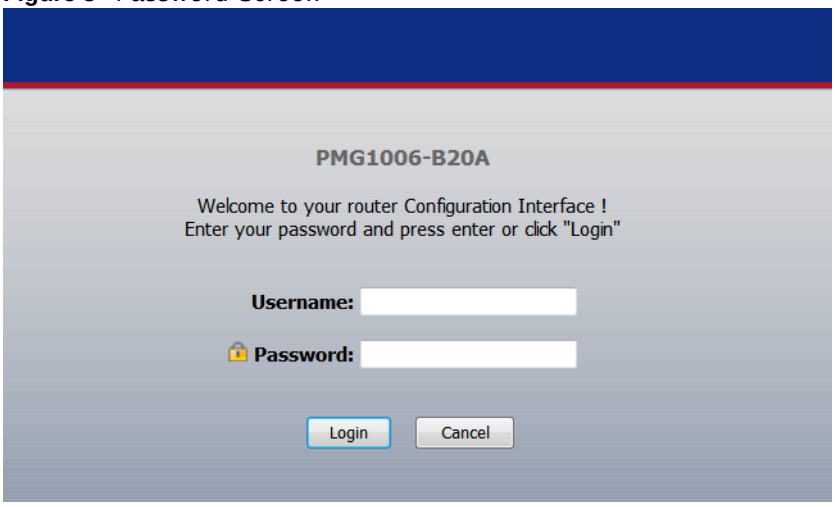
In order to use the Web Configurator you need to allow:

- Web browser pop-up windows from your GPON Device. Web pop-up blocking is enabled by default in Windows XP SP (Service Pack) 2.
- JavaScript (enabled by default).
- Java permissions (enabled by default).

2.1.1 Accessing the Web Configurator

1. Make sure your GPON Device hardware is properly connected (see the Quick Start Guide for details).
2. Set your computer's IP address to 192.168.1.5.
3. Launch your web browser.
4. Type the default GPON Device address shown on the cover page of this User's Guide as the URL.
5. A password screen displays. Enter the user name and password shown on the cover page of this User's Guide and click **Login**.

Figure 3 Password Screen



Note: For security reasons, the GPON Device automatically logs you out if you do not use the Web Configurator for an extended period of time. If this happens, log in again.

6 Use the next screen to change your password. Make sure you write your new password down and store it in a safe place. Click **Apply**.

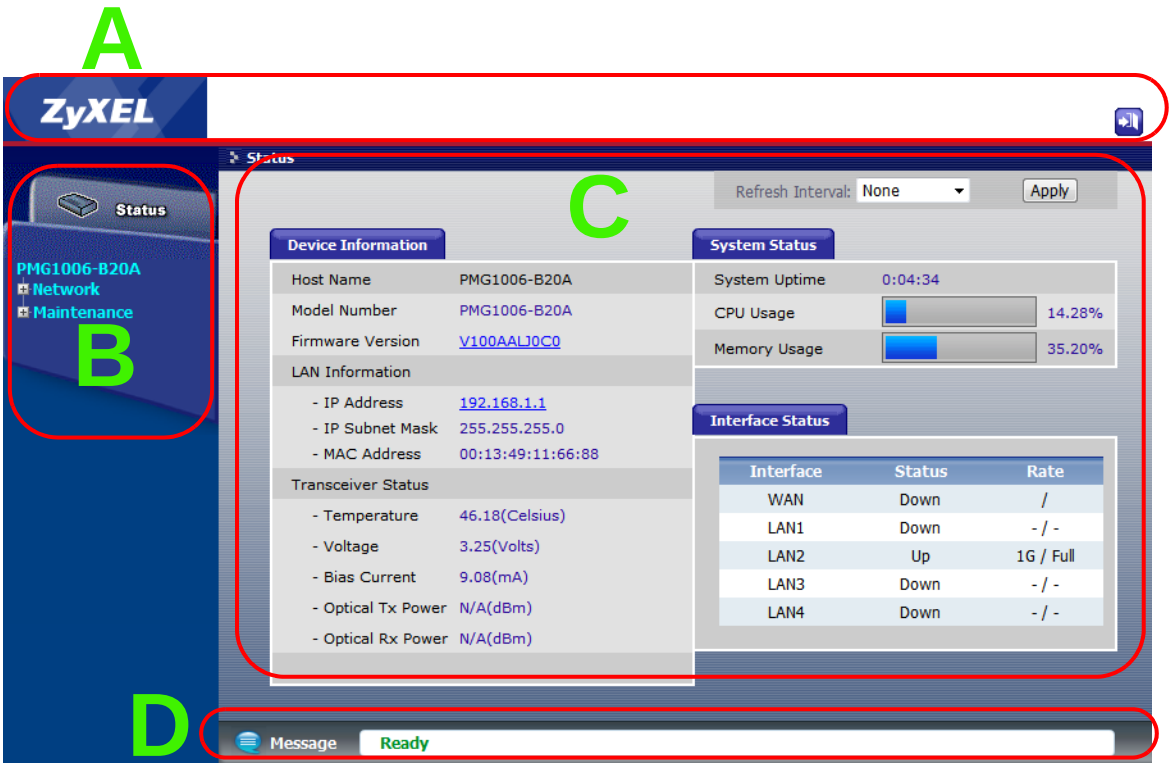
Figure 4 Change Password Screen

Use this screen to change the password.
Your router is currently using the default password. To protect your network from unauthorized users we suggest you change your password at this time. Please select a new password that will be easy to remember yet difficult for others to guess. We suggest you combine text with numbers to make it more difficult for an intruder to guess.
Enter your new password in the two fields below and click "Apply". Otherwise click "Ignore" to keep the default password.
New Password:
Retype to Confirm:
Apply
Ignore

2.2 Web Configurator Main Screen

The main screen is divided into these parts:

Figure 5 Main Screen



- **A** - title bar
- **B** - navigation panel
- **C** - main window
- **D** - status bar

2.2.1 Title Bar

The title bar provides a **Logout** icon in the upper right corner. Click this icon to log out of the Web Configurator.

Figure 6 Logout Icon

2.2.2 Navigation Panel

The following table describes the menu items on the navigation panel.

Table 2 Navigation Panel Summary

LINK	TAB	FUNCTION
Status		This screen shows the GPON Device's general device and interface status information.
Network		
LAN	IP	Use this screen to configure your GPON Device's LAN IP address and subnet mask.
Maintenance		
SLID	SLID	Use this screen to change your GPON Device's Subscriber Location ID (SLID) setting. The SLID identifies your device to the GPON service provider.
System	General	Use this screen to configure your GPON Device's name, management inactivity timeout, and password.
	Transceiver	Use this screen to view current status information for the GPON Device's optical transceiver and configure transceiver alarm thresholds.
Logs	View Log	Use this screen to display your GPON Device's logs.
	Log Settings	Use this screen to select which logs the GPON Device records.
Tools	Firmware	Use this screen to upload firmware to your GPON Device.
	Configuration	Use this screen to backup and restore your GPON Device's configuration (settings) or reset the factory default settings.
	Restart	Use this screen to reboot the GPON Device without turning the power off.

2.2.3 Main Window

The main window displays information and configuration fields. It is discussed in the rest of this document. The **Status** screen displays after you log in. See Chapter 3 on page 13 for details about the **Status** screen.

2.2.4 Status Bar

Check the status bar when you click **Apply** or **OK** to verify that the configuration has been updated.

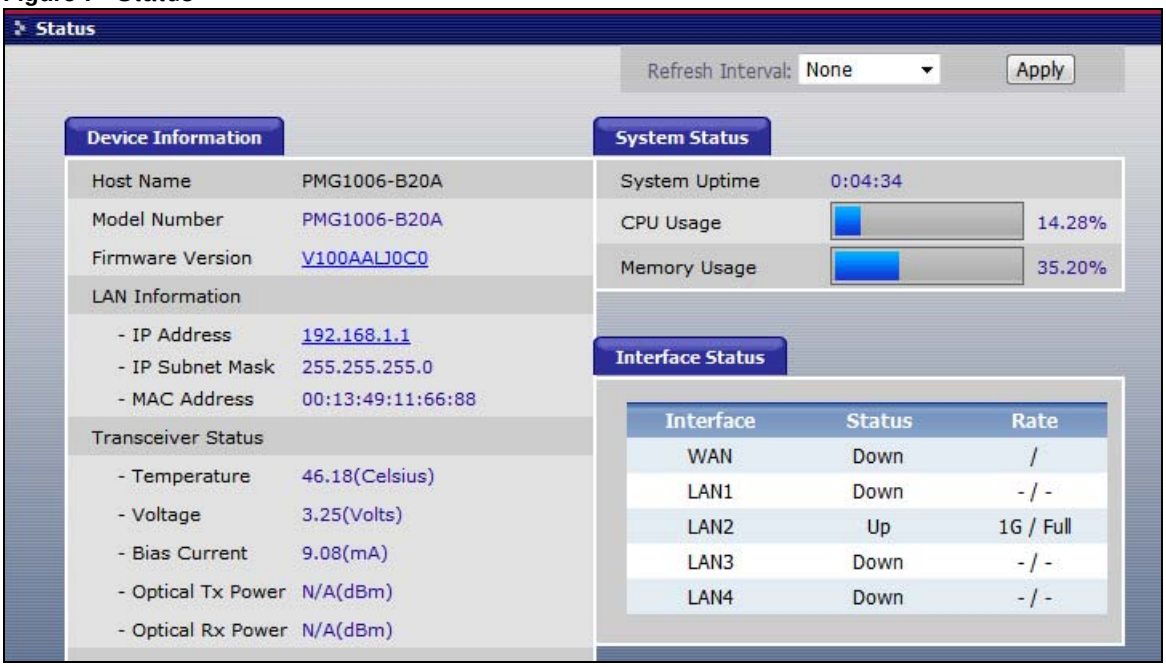
3

Status Screen

3.1 Status

Click **Status** to see the current status of the GPON Device, its system resources, and interfaces.

Figure 7 Status



Each field is described in the following table.

Table 3 Status

LABEL	DESCRIPTION
Refresh Interval	Select how often you want the GPON Device to update this screen from the drop-down list box.
Device Information	
Host Name	This field displays the GPON Device system name. It is used for identification. You can change this in the **Maintenance > System > General** screen's **System Name** field.
Model Number	This is the model name of the GPON Device.
Firmware Version	This field displays the current version of the firmware inside the GPON Device. Click this to go to the screen where you can change it.
LAN Information	
IP Address	This field displays the current IP address of the GPON Device in the LAN. Click this to go to the screen where you can change it.
IP Subnet Mask	This field displays the GPON Device's LAN subnet mask.

Table 3 Status (continued)

LABEL	DESCRIPTION
MAC Address	This is the LAN interface MAC (Media Access Control) address unique to your GPON Device. The MAC address uses six pairs of hexadecimal notation and follows an industry standard that ensures no other adapter has the same address.
Transceiver Status	
Temperature	This displays the transceiver's temperature in Celsius. The normal range is 0-70 degrees.
Voltage	This displays the transceiver's voltage in Volts. The normal range is 3.13-3.47 Volts.
Bias Current	This displays the transceiver's bias current in mA. The normal range is 4-50 mA.
Optical Tx Power	This displays the transceiver's optical transmitting power in dBm. The normal range is .5 to 5 dBm.
Optical Rx Power	This displays the transceiver's optical receiving power in dBm. The normal range is -6 to -28 dBm.
System Status	
System Uptime	This field displays how long the GPON Device has been running since it last started up. The GPON Device starts up when you turn it on, when you restart it (**Maintenance > Tools > Restart**), or when you reset it.
CPU Usage	This field displays what percentage of the GPON Device's processing ability is currently used. When this percentage is close to 100%, the GPON Device is running at full load, and the throughput is not going to improve anymore. If you want some applications to have more throughput, you should turn off other applications.
Memory Usage	This field displays what percentage of the GPON Device's memory is currently used. Usually, this percentage should not increase much. If memory usage gets close to 100%, the GPON Device is probably becoming unstable. Restart it (see Section 5.10 on page 25, or turn it off for a few seconds.
Interface Status	
Interface	This column identifies the interface on the GPON Device.
Status	This field displays **Up** when the interface has a connection and **Down** when it does not.
Rate	This field displays the connection speed of the WAN interface's PON connection when it is connected. This field displays the connection speed and duplex for a connected LAN interface.

4

LAN

4.1 Overview

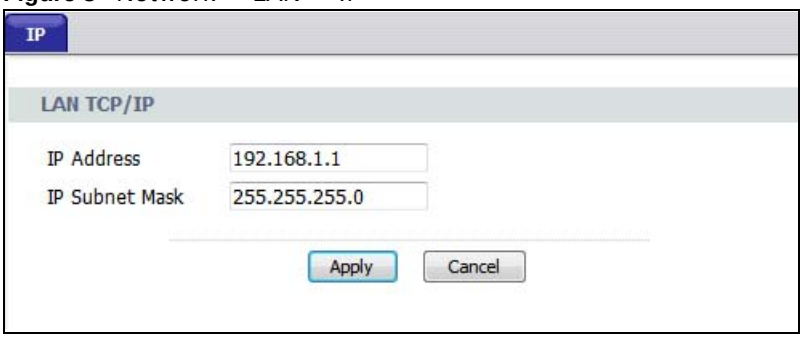
This chapter describes how to configure LAN settings.

A Local Area Network (LAN) is a shared communication system to which many computers are attached. A LAN is a computer network limited to the immediate area, usually the same building or floor of a building.

4.2 IP

Click **Network > LAN** to open the **IP** screen. Use this screen to set the Local Area Network IP address and subnet mask of your GPON Device.

Figure 8 Network > LAN > IP



The following table describes the fields in this screen.

Table 4 Network > LAN > IP

LABEL	DESCRIPTION
IP Address	Enter the LAN IP address you want to assign to your GPON Device in dotted decimal notation, for example, 192.168.1.1 (factory default).
IP Subnet Mask	Type the subnet mask of your network in dotted decimal notation, for example 255.255.255.0 (factory default). Your GPON Device automatically computes the subnet mask based on the IP address you enter, so do not change this field unless you are instructed to do so.
Apply	Click **Apply** to save your changes back to the GPON Device.
Cancel	Click **Cancel** to begin configuring this screen afresh.

5

Maintenance

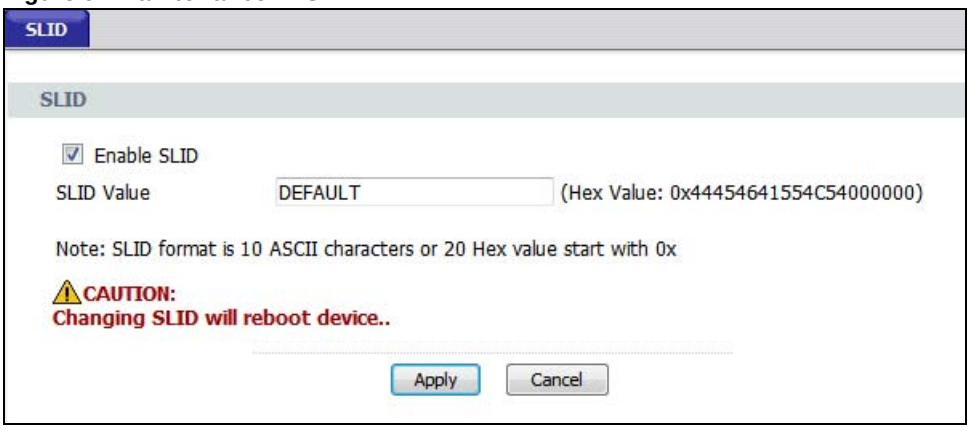
5.1 Overview

- Use the **SLID** screen (see Section 5.2 on page 17) to change your GPON Device's Subscriber Location ID (SLID) setting.
- Use the **General** screen (see Section 5.3 on page 18) to configure your GPON Device's name, management inactivity timeout, and password.
- Use the **Transceiver** screen (see Section 5.4 on page 19) to view current status information for the GPON Device's optical transceiver and configure transceiver alarm thresholds.
- Use the **Logs** screens (see Section 5.5 on page 20 and Section 5.6 on page 21) to display your GPON Device's logs and select which logs to record.
- Use the **Tools** screens (see Section 5.7 on page 22 through Section 5.10 on page 25) to upload new firmware, manage configuration files and restart your GPON Device.

5.2 SLID

To change your GPON Device's Subscriber Location ID (SLID) setting, click **Maintenance > SLID**. The screen appears as shown. The SLID identifies your device to the GPON service provider's Optical Line Terminal (OLT). If your GPON service provider gave you an SLID to use, enter it in this screen.

Figure 9 Maintenance > SLID



The following table describes the fields in this screen.

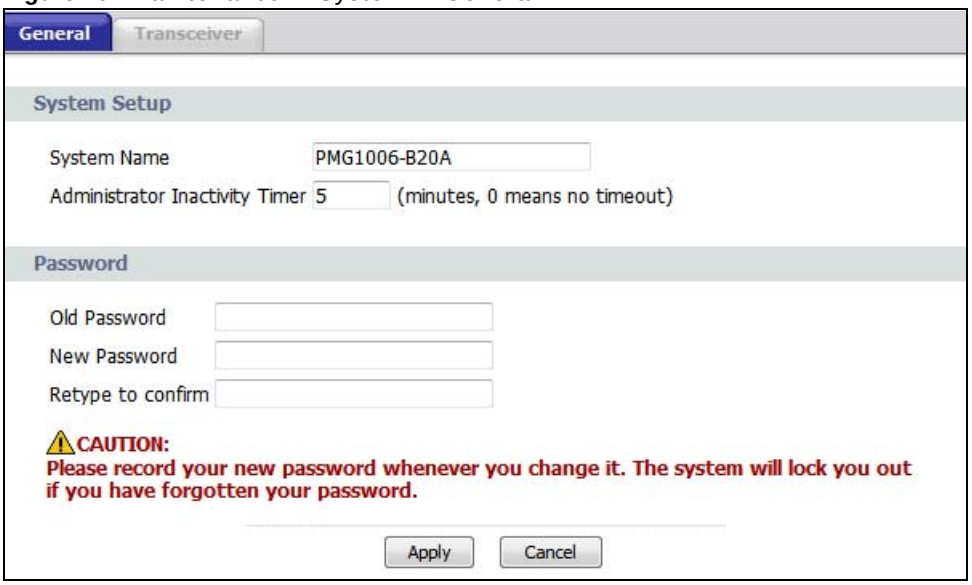
Table 5 Maintenance > SLID

LABEL	DESCRIPTION
Enable SLID	Select this to have the GPON Device use the SLID to identify itself to the OLT.
SLID Value	Enter the SLID used for gaining access to the service provider's network. It is case-sensitive, so make sure [Caps Lock] is not on.
Apply	Click **Apply** to save your changes back to the GPON Device.
Cancel	Click **Cancel** to begin configuring this screen afresh.

5.3 General

Use this screen to configure the GPON Device's system name, inactivity timer, and password. Click **Maintenance > System** to open the **General** screen.

Figure 10 Maintenance > System > General



The following table describes the labels in this screen.

Table 6 Maintenance > System > General

LABEL	DESCRIPTION
General Setup	
System Name	Choose a descriptive name for identification purposes. Because some ISPs check this name it is recommended you enter your computer's "Computer name" in this field. This name can be up to 30 alphanumeric characters long. Spaces are not allowed, but dashes "-" and underscores "_" are accepted. • To find your computer's name in Windows XP, click **Start > My Computer > View system information** and then click the **Computer Name** tab. See the **Full computer name** field. • In Windows 7, click **Start**, right click **Computer**, and click **Properties**. See the entry in the **Full computer name** field.

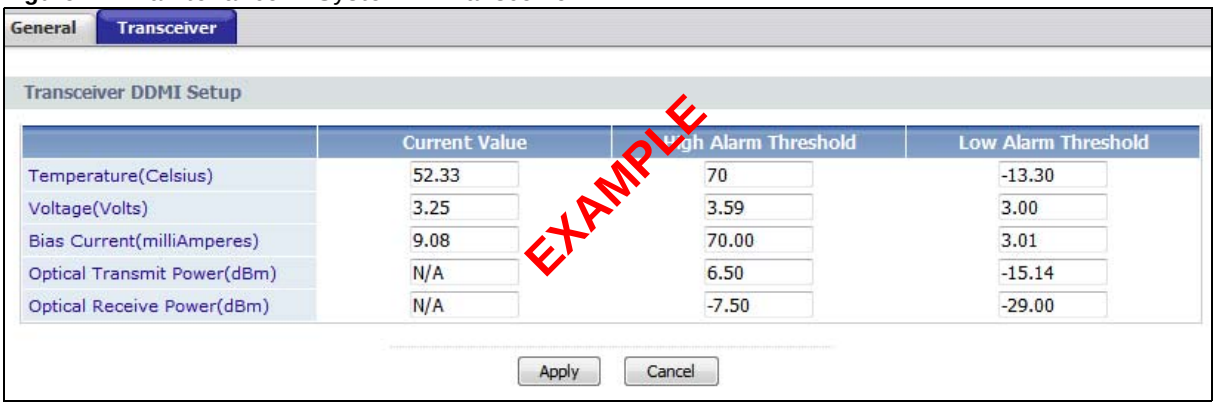
Table 6 Maintenance > System > General (continued)

LABEL	DESCRIPTION
Administrator Inactivity Timer	Type how many minutes a management session (either via the Web Configurator or telnet) can be left idle before the session times out. The default is 5 minutes. After it times out you have to log in with your password again. Very long idle timeouts may have security risks. A value of "0" means a management session never times out, no matter how long it has been left idle (not recommended).
Password	
Old Password	Type the default password or the existing password you use to access the system in this field.
New Password	Type your new system password (up to 30 characters). Note that as you type a password, the screen displays a (*) for each character you type. After you change the password, use the new password to access the GPON Device.
Retype to Confirm	Type the new password again for confirmation.
Apply	Click **Apply** to save your changes back to the GPON Device.
Cancel	Click **Cancel** to begin configuring this screen afresh.

5.4 Transceiver

Click **Maintenance > System > Transceiver** to view your GPON Device's current transceiver status and configure alarm thresholds. The optical SFP transceiver's support for the Digital Diagnostics Monitoring Interface (DDMI) function lets you monitor the transceiver's parameters to perform component monitoring, fault isolation and failure prediction tasks. This allows proactive, preventative network maintenance to help ensure service continuity. The values in the following figure are an example for reference only. See the table for details about the normal parameter ranges.

Figure 11 Maintenance > System > Transceiver



Each field is described in the following table.

Table 7 Maintenance > System > Transceiver

LABEL	DESCRIPTION
Current Value	This column displays the current status for each monitored DDMI parameter.
High Alarm Threshold	Use this column to set the high value alarm threshold for each monitored DDMI parameter. The GPON Device reports an alarm signal to the Optical Line Terminal (OLT) if the monitored DDMI parameter reaches this value.

Table 7 Maintenance > System > Transceiver (continued)

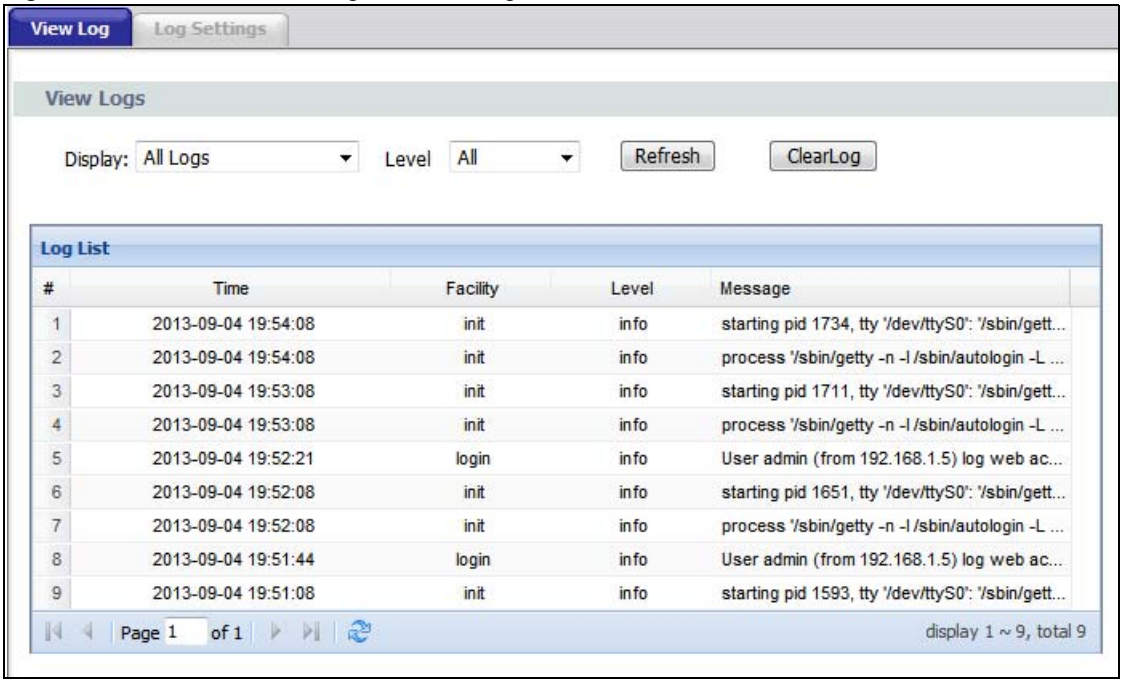
LABEL	DESCRIPTION
Low Alarm Threshold	Use this column to set the low value alarm threshold for each monitored DDMI parameter. The GPON Device reports an alarm signal to the Optical Line Terminal (OLT) if the monitored DDMI parameter reaches this value.
Temperature (Celsius)	The transceiver's temperature in Celsius. The normal range is 0-70 degrees.
Voltage (Volts)	The transceiver's voltage in Volts. The normal range is 3.13-3.47 Volts.
Bias Current (milliAmperes)	The transceiver's bias current in mA. The normal range is 4-50 mA.
Optical Transmit Power (dBm)	The transceiver's optical transmitting power in dBm. The normal range is .5 to 5 dBm. N/A displays when the PON port is not connected.
Optical Receive Power (dBm)	The transceiver's optical receiving power in dBm. The normal range is -6 to -28 dBm. N/A displays when the PON port is not connected.
Apply	Click **Apply** to save your changes back to the GPON Device.
Cancel	Click **Cancel** to begin configuring this screen afresh.

5.5 View Log

Click **Maintenance > Logs** to open the **View Log** screen. Use this screen to see the logs for the categories that you selected in the **Log Settings** screen (see Section 5.6 on page 21).

Log entries in red indicate alerts. The log wraps around and deletes the old entries after it fills. Click a column heading to sort the entries. A triangle indicates ascending or descending sort order.

Figure 12 Maintenance > Logs > View Log


View Log
Log Settings
View Logs
Display: All Logs
Level All
Refresh
ClearLog
Log List
Time Facility Level Message
1 2013-09-04 19:54:08 init info starting pid 1734, tty '/dev/ttyS0': '/sbin/gett...
2 2013-09-04 19:54:08 init info process '/sbin/getty -n -l /sbin/autologin -L ...
3 2013-09-04 19:53:08 init info starting pid 1711, tty '/dev/ttyS0': '/sbin/gett...
4 2013-09-04 19:53:08 init info process '/sbin/getty -n -l /sbin/autologin -L ...
5 2013-09-04 19:52:21 login info User admin (from 192.168.1.5) log web ac...
6 2013-09-04 19:52:08 init info starting pid 1651, tty '/dev/ttyS0': '/sbin/gett...
7 2013-09-04 19:52:08 init info process '/sbin/getty -n -l /sbin/autologin -L ...
8 2013-09-04 19:51:44 login info User admin (from 192.168.1.5) log web ac...
9 2013-09-04 19:51:08 init info starting pid 1593, tty '/dev/ttyS0': '/sbin/gett...
Page 1 of 1
display 1 ~ 9, total 9

The following table describes the fields in this screen.

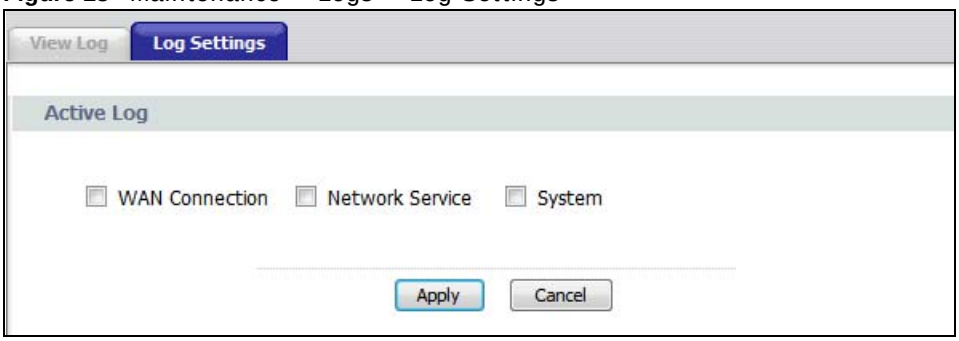
Table 8 Maintenance > Logs > View Log

LABEL	DESCRIPTION
Display	The categories that you select in the **Log Settings** screen display in the drop-down list box. Select a category of logs to view; select **All Logs** to view logs from all of the log categories that you selected in the **Log Settings** page.
Refresh	Click **Refresh** to renew the log screen.
Clear Log	Click **Clear Log** to delete all the logs.
#	This field is a sequential value and is not associated with a specific entry.
Time	This field displays the time the log was recorded.
Facility	This indicates the type of connection to the GPON Device.
Level	This indicates the log severity.
Message	This field states the reason for the log.
First	Click this to cycle to the first page of logs.
Previous	Click this to cycle to the previous page of logs.
Page	This indicates which page you are on, out of how many. You can enter a page number here and press [Enter] to jump directly to that page.
Next	Click this to cycle to the next page of logs.
Last	Click this to cycle to the last page of logs
Refresh	Click this to refresh the logs screen.

5.6 Log Settings

Use this screen to configure which logs to display on the **View Logs** screen (see Section 5.5 on page 20). Click **Maintenance > Logs > Log Settings**.

Figure 13 Maintenance > Logs > Log Settings



The following table describes the fields in this screen.

Table 9 Maintenance > Logs > Log Settings

LABEL	DESCRIPTION
Active Log	
[Log Type]	Select the type of log you want to be displayed on the **View Logs** screen.

Table 9 Maintenance > Logs > Log Settings

LABEL	DESCRIPTION
Apply	Click **Apply** to save your customized settings and exit this screen.
Cancel	Click **Cancel** to return to the previously saved settings.

5.7 Tools Screens Overview

Use the **Tools** screens to upload new firmware, manage configuration files and restart your GPON Device.

Use the instructions in this chapter to change the GPON Device's configuration file or upgrade its firmware. After you configure your GPON Device, you can backup the configuration file to a computer. That way if you later misconfigure the GPON Device, you can upload the backed up configuration file to return to your previous settings. You can alternately upload the factory default configuration file if you want to return the GPON Device to the original default settings. The firmware determines the GPON Device's available features and functionality.

5.7.1 Some Warnings

The following are some friendly reminders about your GPON Device:

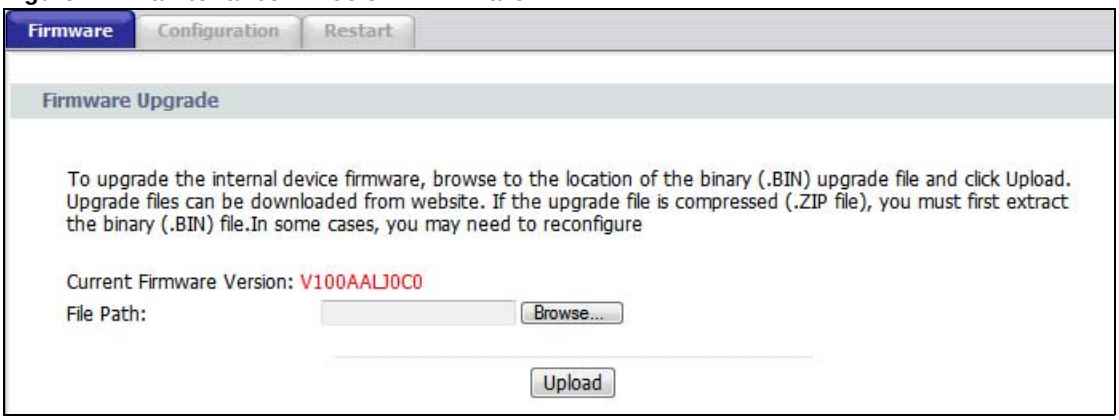
Do NOT turn off the GPON Device while a firmware upload is in progress!

Only use firmware for your specific model. Refer to the label on the bottom of your GPON Device.

5.8 Firmware

Click **Maintenance > Tools** to open the **Firmware** screen. Follow the instructions in this screen to upload firmware to your GPON Device. The upload process uses HTTP (Hypertext Transfer Protocol) and may take up to two minutes. After a successful upload, the system will reboot.

Figure 14 Maintenance > Tools > Firmware


Firmware
Configuration
Restart
Firmware Upgrade
To upgrade the internal device firmware, browse to the location of the binary (.BIN) upgrade file and click Upload. Upgrade files can be downloaded from website. If the upgrade file is compressed (.ZIP file), you must first extract the binary (.BIN) file.In some cases, you may need to reconfigure
Current Firmware Version: V100AALJ0C0
File Path:
Browse...
Upload

The following table describes the labels in this screen.

Table 10 Maintenance > Tools > Firmware

LABEL	DESCRIPTION
Firmware Upgrade	
Current Firmware Version	This is the present Firmware version and the date created.
File Path	Type in the location of the file you want to upload in this field or click **Browse ...** to find it.
Browse...	Click **Browse...** to find the .bin file you want to upload. Remember that you must decompress compressed (.zip) files before you can upload them.
Upload	Click **Upload** to begin the upload process. This process may take up to two minutes.

After you see the **Firmware Upload in Progress** screen, wait three minutes before logging into the GPON Device again.

The GPON Device automatically restarts in this time causing a temporary network disconnect.

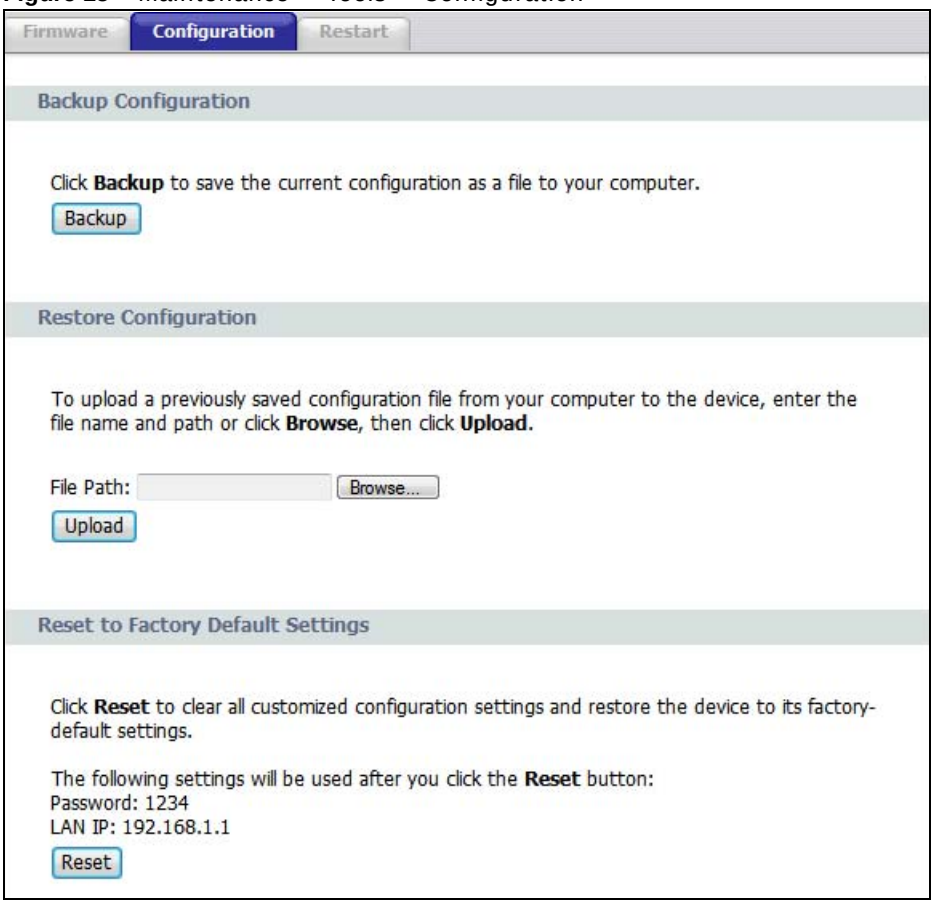
After two minutes, log in again and check your new firmware version in the **Status** screen.

If the upload was not successful, the following screen will appear. Click **Return** to go back to the **Firmware** screen.

5.9 Configuration

Click **Maintenance > Tools > Configuration**. Information related to factory defaults, backup configuration, and restoring configuration appears in this screen, as shown next.

Figure 15 Maintenance > Tools > Configuration


Firmware
Configuration
Restart
Backup Configuration
Click Backup to save the current configuration as a file to your computer.
Backup
Restore Configuration
To upload a previously saved configuration file from your computer to the device, enter the file name and path or click Browse, then click Upload.
File Path:
Browse...
Upload
Reset to Factory Default Settings
Click Reset to clear all customized configuration settings and restore the device to its factory-default settings.
The following settings will be used after you click the Reset button:
Password: 1234
LAN IP: 192.168.1.1
Reset

5.9.1 Backup Configuration

Backup Configuration allows you to back up (save) the GPON Device's current configuration to a file on your computer. Once your GPON Device is configured and functioning properly, it is highly recommended that you back up your configuration file before making configuration changes. The backup configuration file will be useful in case you need to return to your previous settings.

Click **Backup** to save the GPON Device's current configuration to your computer.

5.9.2 Restore Configuration

Restore Configuration allows you to upload a new or previously saved configuration file from your computer to your GPON Device.

Table 11 Restore Configuration

LABEL	DESCRIPTION
File Path	Type in the location of the file you want to upload in this field or click **Browse ...** to find it.
Browse...	Click **Browse...** to find the file you want to upload. Remember that you must decompress compressed (.ZIP) files before you can upload them.
Upload	Click **Upload** to begin the upload process.

After you see a “restore configuration successful” screen, you must then wait one minute before logging into the GPON Device again.

The GPON Device automatically restarts in this time causing a temporary network disconnect.

If you uploaded the default configuration file you may need to change the IP address of your computer to be in the same subnet as the default GPON Device IP address shown on the cover.

If the upload was not successful, the following screen will appear. Click **Return** to go back to the **Configuration** screen.

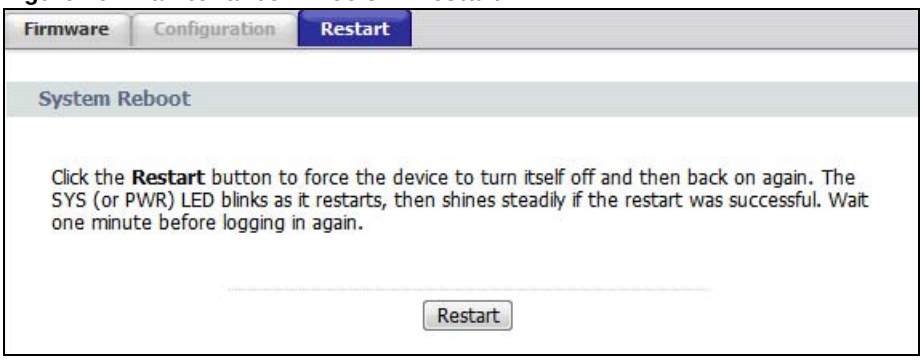
5.9.3 Reset to Factory Defaults

Click the **Reset** button to clear all user-entered configuration information and return the GPON Device to its factory defaults. You can also press the **RESET** button on the rear panel to reset the factory defaults of your GPON Device (see Section 1.5 on page 7 for details).

5.10 Restart

System restart allows you to reboot the GPON Device without turning the power off. Click **Maintenance > Tools > Restart**. Click **Restart** to have the GPON Device reboot. This does not affect the GPON Device's configuration.

Figure 16 Maintenance > Tools > Restart


Firmware
Configuration
Restart
System Reboot
Click the Restart button to force the device to turn itself off and then back on again. The SYS (or PWR) LED blinks as it restarts, then shines steadily if the restart was successful. Wait one minute before logging in again.
Restart

6

Troubleshooting

6.1 Overview

This chapter offers some suggestions to solve problems you might encounter. The potential problems are divided into the following categories.

- Power, Hardware Connections, and LEDs
- GPON Device Access and Login
- Internet Access

6.2 Power, Hardware Connections, and LEDs

The GPON Device does not turn on. None of the LEDs turn on.

1. Make sure the GPON Device is turned on.
2. Make sure you are using the power adaptor or cord included with the GPON Device.
3. Make sure the power adaptor or cord is connected to the GPON Device and plugged in to an appropriate power source. Make sure the power source is turned on.
4. Turn the GPON Device off and on.
5. If the problem continues, contact the vendor.

One of the LEDs does not behave as expected.

1. Make sure you understand the normal behavior of the LED. The **PON** LED turns red if the optical transceiver has malfunctioned or the fiber cable is not connected or is broken or damaged enough to break the PON connection. See Section 1.4 on page 6 for details about the other LEDs.
2. Check the hardware connections. See the Quick Start Guide for details.
3. Inspect your cables for damage. Contact the vendor to replace any damaged cables.
4. Turn the GPON Device off and on.

5 If the problem continues, contact the vendor.

6.3 GPON Device Access and Login

I forgot the IP address for the GPON Device.

1 The default IP address is 192.168.1.1.

2 If you changed the IP address and have forgotten it, reset the GPON Device to its factory defaults. See Section 1.5 on page 7.

I cannot see or access the **Login** screen in the Web Configurator.

1 Make sure you are using the correct IP address.
- The default IP address is 192.168.1.1.
- If you changed the IP address, use the new IP address.
- If you changed the IP address and have forgotten it, reset the GPON Device to its factory defaults. See Section 1.5 on page 7.

2 Check the hardware connections, and make sure the LEDs are behaving as expected. See Section 1.4 on page 6.

3 Make sure your Internet browser does not block pop-up windows and has Javascript and Java enabled.

4 Reset the GPON Device to its factory defaults, and try to access the GPON Device with the default IP address. See Section 1.5 on page 7.

5 If the problem continues, contact the network administrator or vendor.

I can see the **Login** screen, but I cannot log in to the GPON Device.

1 Make sure you have entered the user name and password correctly. The default user name is shown on the cover page of this User's Guide. These fields are case-sensitive, so make sure [Caps Lock] is not on.

2 You cannot log in to the Web Configurator while someone is using Telnet to access the GPON Device. Log out of the GPON Device in the other session, or ask the person who is logged in to log out.

3 Turn the GPON Device off for ten seconds and then back on.

4 If this does not work, you have to reset the GPON Device to its factory defaults. See Section 1.5 on page 7.

6.4 Internet Access

I cannot access the Internet.

1 Check the hardware connections, and make sure the LEDs are behaving as expected.

The **PON** LED turns red if the optical transceiver has malfunctioned or the fiber cable is not connected or is broken or damaged enough to break the PON connection.

The **PON** LED turns orange if the GPON Device's PON port is physically connected but not registered. If the service provider gave you an SLID to use, make sure you entered the SLID correctly (see Section 5.2 on page 17). It is case-sensitive, so make sure [Caps Lock] is not on.

See Section 1.4 on page 6 for details about the other LEDs.

2 Make sure you entered the ISP account information correctly in your computer. These fields are case-sensitive, so make sure [Caps Lock] is not on.

3 Disconnect all the cables from your GPON Device, and follow the directions in the Quick Start Guide again.

4 If the problem continues, contact the ISP.

I cannot access the Internet anymore. I had access to the Internet (with the GPON Device), but my Internet connection is not available anymore.

1 Check the hardware connections, and make sure the LEDs are behaving as expected. The **PON** LED turns red if the optical transceiver has malfunctioned or the fiber cable is not connected or is broken or damaged enough to break the PON connection. See Section 1.4 on page 6 for details about the other LEDs.

2 Turn the GPON Device off and on.

3 If the problem appears to be the GPON Device, contact the ISP.

The Internet connection is slow or intermittent.

1 There might be a lot of traffic on the network. Look at the LEDs (see Section 1.4 on page 6). If the GPON Device is sending or receiving a lot of information, try closing some programs that use the Internet, especially peer-to-peer applications.

2 Turn the GPON Device off and on.

3 If the problem continues, contact the network administrator or vendor.

A

Legal Information

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Federal Communications Commission (FCC) Interference Statement

This device has been tested and found to comply with the limits for a Class B digital device pursuant to Part 15 of the FCC Rules. These limits are designed to provide reasonable protection against harmful interference in a residential installation. This device generates, uses, and can radiate radio frequency energy, and if not installed and used in accordance with the instructions, may cause harmful interference to radio communications. However, there is no guarantee that interference will not occur in a particular installation.

If this device does cause harmful interference to radio/television reception, which can be determined by turning the device off and on, the user is encouraged to try to correct the interference by one or more of the following measures:

1. Reorient or relocate the receiving antenna.
2. Increase the separation between the equipment and the receiver.
3. Connect the equipment into an outlet on a circuit different from that to which the receiver is connected.
4. Consult the dealer or an experienced radio/TV technician for help.

Notices

Changes or modifications not expressly approved by the party responsible for compliance could void the user's authority to operate the equipment.

Viewing Certifications

Go to http://www.zyxel.com to view this product's documentation and certifications.

ZyXEL Limited Warranty

ZyXEL warrants to the original end user (purchaser) that this product is free from any defects in material or workmanship for a specific period (the Warranty Period) from the date of purchase. The Warranty Period varies by region. Check with your vendor and/or the authorized ZyXEL local distributor for details about the Warranty Period of this product. During the warranty period, and upon proof of purchase, should the product have indications of failure due to faulty workmanship and/or materials, ZyXEL will, at its discretion, repair or replace the defective products or components without charge for either parts or labor, and to whatever extent it shall deem necessary to restore the product or components to proper operating condition. Any replacement will consist of a new or re-manufactured functionally equivalent product of equal or higher value, and will be solely at the discretion of ZyXEL. This warranty shall not apply if the product has been modified, misused, tampered with, damaged by an act of God, or subjected to abnormal working conditions.

Note

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To obtain the services of this warranty, contact your vendor. You may also refer to the warranty policy for the region in which you bought the device at http://www.zyxel.com/web/support_warranty_info.php.

Registration

Register your product online to receive e-mail notices of firmware upgrades and information at www.zyxel.com for global products, or at www.us.zyxel.com for North American products.

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This product contains in part some free software distributed under GPL license terms and/or GPL like licenses. Open source licenses are provided with the firmware package. You can download the latest firmware at www.zyxel.com. To obtain the source code covered under those Licenses, please contact support@zyxel.com.tw to get it.

Safety Warnings

- To avoid possible eye injury, do NOT look into an operating fiber-optic module's connector.
- Do NOT use this product near water, for example, in a wet basement or near a swimming pool.
- Do NOT expose your device to dampness, dust or corrosive liquids.
- Do NOT store things on the device.
- Do NOT install, use, or service this device during a thunderstorm. There is a remote risk of electric shock from lightning.
- Connect ONLY suitable accessories to the device.
- Do NOT open the device or unit. Opening or removing covers can expose you to dangerous high voltage points or other risks. ONLY qualified service personnel should service or disassemble this device. Please contact your vendor for further information.
- Make sure to connect the cables to the correct ports.
- Place connecting cables carefully so that no one will step on them or stumble over them.
- Always disconnect all cables from this device before servicing or disassembling.
- Use ONLY an appropriate power adaptor or cord for your device. Connect it to the right supply voltage (for example, 110V AC in North America or 230V AC in Europe).
- Do NOT allow anything to rest on the power adaptor or cord and do NOT place the product where anyone can walk on the power adaptor or cord.
- Do NOT use the device if the power adaptor or cord is damaged as it might cause electrocution.
- If the power adaptor or cord is damaged, remove it from the device and the power source.
- Do NOT attempt to repair the power adaptor or cord. Contact your local vendor to order a new one.
- Do not use the device outside, and make sure all the connections are indoors. There is a remote risk of electric shock from lightning.
- Do NOT obstruct the device ventilation slots, as insufficient airflow may harm your device.
- If you wall mount your device, make sure that no electrical lines, gas or water pipes will be damaged.
- This product is for indoor use only (utilisation intérieure exclusivement).

Your product is marked with this symbol, which is known as the WEEE mark. WEEE stands for Waste Electronics and Electrical Equipment. It means that used electrical and electronic products should not be mixed with general waste.

"PRODUCT COMPLIES WITH 21 CFR 1040.10 AND 1040.11"

"PRODUIT CONFORME SELON 21CFR 1040.10 ET 1040.11"

CLASS 1 LASER PRODUCT

APPAREIL À LASER DE CLASSE 1

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